REMARKS/ARGUMENTS

Applicants respond herein to the Office Action dated January 19, 2006.

Applicants' attorneys appreciate the Examiner's thorough search and examination of the present patent application and the indication of allowability of the subject matter of claims 11-14.

Claims 4-14 are pending in this application. Claims 1-3 were previously cancelled, not withdrawn from consideration as indicated in the Office Action. Claims 4-10 have been rejected and claims 11-14 have been objected to.

Claims 4-10 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,952,587 to Rhodes et al. ("Rhodes").

Reconsideration and withdrawal of these rejections are respectfully requested.

The specification and claim 4 are being amended to correct typographical errors. Additionally, the term "devices" in claim 4 is being replaced by the term "sensor units".

In accordance with independent claim 4, the claimed antifriction bearing includes an inner bearing ring and an outer bearing ring spaced outward from and extending around the inner bearing ring; rolling antifriction elements in rolling contact with the inner and the outer rings; and sensors at locations around the rings for determining length changes in the rolling contacts between the antifriction elements and one of the rings. Claim 4 further recites that "the sensors further comprise sensor units for determining the length change in the rolling contact for several of the antifriction elements over respective arcuate regions of the rings and the sensor units each are operable to define region vectors for the length changes of the rolling contacts in their respective regions. Claim 4 additionally recites "an interface connected with the sensor units for receiving the region vectors from each of the sensor units; and an evaluation unit for evaluating the region vectors supplied by the interface for determining a condition of the bearing that is dependent upon the length change in the rolling contacts between the antifriction elements and the one ring. Underlining in this paragraph was added for emphasis.

Rhodes does not teach that. Instead Rhodes discloses a sensor-system for sensing real-time rolling element loads in an antifriction bearing. In Rhodes, the antifriction bearing includes an inner bearing ring, an outer bearing ring spaced outward from and extending around the inner bearing ring and a rolling antifriction elements in rolling contact with the inner and the outer rings.

The Rhodes sensor-system includes a plurality of sensors disposed about the inner ring and the outer ring of the bearing to output sensor data corresponding to detected loads. A plurality of conductive wires corresponding to the plurality of the sensors transmit the sensor data to a control unit for subsequent processing. The control unit predicts bearing life from the sensor data and determines a load zone of the bearing in real time from the sensor data.

In col. 10 of its specification, in describing processing the sensor data, Rhodes states the following:

> The load on each roller and its axial and radial components are then calculated for an embodiment of tapered roller bearings as follows:
> First, the strain readings are converted into equivalent axial loads using the slope calculated during the calibration procedure described above. (lines 12-17)
>
> Then the axial components of load are converted into radial and roller components by using the contact angle of the bearing. (lines 31-33)
>
> The radial component is further resolved into x and y components in the plane of the bearing lines (lines 48-49)
>
> The total load on the bearing in the vertical direction and in the direction of travel are the x and y components, respectively, summed over the n rollers. (lines 56-58)

Rhodes processes load vectors for each of the rolling elements. The total load on the bearing is processed by summing all the load vectors over the n rolling elements. Rhodes does not teach sensor units that are operable to define region vectors. Similarly, there is no suggestion in Rhodes of a standardized interface introduced between the sensor units and evaluation unit. The standardized interface not being sensitive to or being irrespective of the number n of antifriction elements. Rhodes describes receiving all sensor data of all the sensors. This is contrary to the standardized "interface connected with said sensor units for receiving the region vectors from each of the sensor unit" recited in claim 4.

As stated on page 1, line 6 from the bottom to page 7, line 2 of the present application, the sensor-system described in Rhodes exhibits several problems:

> "The problem with the unit disclosed in this text is that, for antifriction bearings having a different number of antifriction elements, a different number of cables have to be led from the antifriction bearing to the evaluation unit located outside. The problem is therefore that the evaluation unit has to be designed differently, depending on the antifriction elements currently used in the antifriction bearings."

On page 2 lines 13-18 the present application describes how the claimed invention resolves these problems:

> "The invention comprises introducing a standardized interface between the antifriction bearing and the evaluation unit. This standardized interface makes it possible always to provide the same information at the interface, irrespective of the number of antifriction elements in the antifriction bearing."

Therefore, Rhodes does not teach, disclose, or suggest at least the above quoted elements of claim 4. Specifically, Rhodes does not teach, disclose, or suggest sensors that "comprise sensor units for determining the length change in the rolling contact for several of the antifriction elements over respective arcuate regions of the rings" and that "the sensor units each are operable to define region vectors for the length changes of the rolling contacts in their respective regions". Further, Rhodes does not disclose "an interface connected with the sensor units for receiving the region vectors from each of the sensor unit". Moreover, Rhodes does not teach, disclose, or suggest "an evaluation unit for evaluating the region vectors supplied by the interface for determining a condition of the bearing that is dependent upon the length change in the rolling contacts between the antifriction elements and the one ring".

Thus, Applicants' independent claim 4 is patentably distinct from Rhodes. Claims 5-14, depend directly or indirectly from above discussed independent claim 1 and are, therefore, patentable for the same reasons, as well as because of the combination of features in those claims with the features set forth in independent claim 1.

The application is believed to be in condition for allowance. Early and favorable consideration of the present application is earnestly solicited.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, on June 19, 2006:

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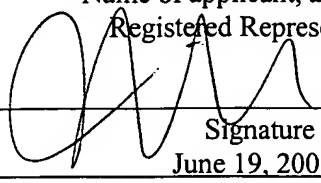
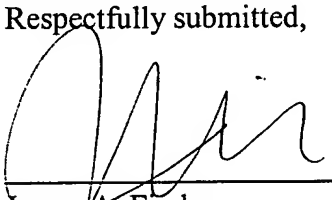


Signature

June 19, 2006
Date of Signature

Respectfully submitted,



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